

## Investigation on the vertebrate remains from Monte delle Piche (Rome, Central Italy)

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### INTRODUCTION

Due to the intense urbanisation of Rome between the 19th century and the beginning of the 20th century, a large number of vertebrate fossil remains were collected from the deposits outcropping in the area of Rome city (MELI, 1896; PONZI, 1878; PORTIS, 1893; *inter alios*). At the beginning of the second half of 19th century, large mammal remains were recovered in deposits at the base of Monte delle Piche (PONZI, 1858). These remains are preserved in the Museum of Paleontology at the Sapienza University of Rome (MPUR).

The aim of the present paper is to define the stratigraphic origin and chronological position of the above-mentioned remains.

### THE MAMMAL REMAINS FROM MONTE DELLE PICHE

The mammal remains from Monte delle Piche include **three fragmentary mandibles of rhinoceroses** and a femur of a large-sized hippopotamus. The latter (MPUR999) was filled and covered with fluvial conglomerates and can be referred to *Hippopotamus* sp.. The **rhino mandible MPUR1515** consists only of a partial horizontal ramus with the two last molars. The remain is covered by thick and hard crust of sediment. The specimen is assigned to Rhinocerotidae indet.. The **rhino mandible MPUR1516** consists of two horizontal rami with teeth. The specimen is covered by a black, hard and relatively thick silt. The two rami are relatively slender, get thinner below the premolars and have a convex lower border. Teeth are brachyodont and the cingula seem to be lacking. Basing on morphological and morphometrical characteristics, **the specimen can be ascribed to *S. cf. S. etruscus***.

The **rhino mandible MPUR138** (Fig. 1) was discussed by PORTIS (1899) and GUÉRIN (1980) (which refers it to *Chilotherium*). The symphysis of the mandible seems to be robust and narrow and begins curving upwards below P/2. The symphysis includes the right tusk (I/2) and the partial alveolus of the left one (they are very slight divergent). There is no indication of any alveolus for I/1 and these teeth were certainly absent. The alveoli of the tusks are very close to each other and the right tusk curves strongly upwards. The horizontal ramus of the mandible is deep and displays a uniform height. The premolars are large and the lingual valleys have a broad V-shaped morphology. These valleys do not reach the base of the lingual side. The general shape and morphology of the mandible **are very close to those of *Acerorhinus zernowi* from Sebastopol** (Crimea) (BORISSIAK, 1914). The mandible MPUR138 differs from *Chilotherium* which has a broader symphysis, the axes of the tusks oblique, the lower border of the mandible slightly convex, the height of the mandible below the premolar shorter and a generally smaller dimensions of the premolars and molars.



Fig. 1 – Mandible MPUR138, lingual view. Scale bar = 10cm.

### OSTRACODS

Sediments covering these mammals remaining were analysed from a micropalaeontological perspective in order to add some palaeoenvironmental informations or to corroborate existing data. The MPUR999 covering deposits yielded few valves of *Cyprideis* instars, in agree with very shallow (optimum of *Cyprideis* <10 m, Neale, 1988) and oligohaline waterbody. The hard blackish crusts of sediment on the MPUR1515 and MPUR1516 mandibles provided few valves of *Loxoconcha* sp. (MPUR1515) and instars of *Krithe* sp. and *Bairdoppilata* sp. (MPUR1516), testifying a marine environment from infralittoral to circalittoral. The MPUR138 mandible provided an ostracod association constituted

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by *Parakrithe* sp., *Cytherella* sp. and *Eopajenborchiella* sp., suggesting a marine circalittoral environment. The association was recovered from clayey sediment filling the rooth of incisive in MPUR138.

## CONCLUSION

Basing on stratigraphic data (see PONZI, 1858; MARRA, 1993, CARBONIO & IORIO, 1997; *inter alios*) and paleontological analysis, at the Monte delle Piche two vertebrate-fossiliferous levels can be recognized. The younger level is represented by fluvial conglomerates and sandstones referable to the Ponte Galeria Formation (>0,800 Ma) which contain the femur of *Hippopotamus*. The older level is represented by siltly deposits, with marine ostracods and foraminifera, referred to the Early Pleistocene (Monte delle Piche Formation) (MARRA, 1993; CARBONI & IORIO, 1997). The age of these deposits is confirmed by the presence of the mandible of *S. cf. S. etruscus* (MPUR1516); the species is reported in Italy approximately from 2,5 to 1,0 Ma (PANDOLFI & PETRONIO, 2011). The mandible MPUR138 can not be referred to the Monte delle Piche succession (as notice by KOTSAKIS, 1984). Indeed, *Acerorhinus zernowi* is typical of late Miocene localities; it is recorded in Turkey, at Pentalophos-1, Crimea and Tung-gur (BORISSIAK, 1914; CERDEÑO, 1996; HEISSIG, 1999; KYA & HEISSIG, 2001). Recently, the genus *Acerorhinus* has been also reported in the latest Miocene of Bulgaria (GEERADS & SPASSOV, 2009).

In Italy, several Miocene mammal remains have been recovered in marine deposits (see KOTSAKIS, 1984) and we can not excluded an Italian origin of the mandible. Probably, additional analysis on the sediment will be useful to investigate on the origin of the specimen.

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